

CONVERGENT TECHNOLOGIES

RELEASE NOTICE FOR
1.0 Quarter-Inch Cartridge (QIC) Tape
Backup Utilities (SXA-1000)
Revised June 20 1985

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1.0 Description of Programs.

This Release Notice describes the Cartridge Tape Backup Utilities Software version 1.0. This section and the sections that follow provide a description of the product, contents of the Distribution Diskette, installation procedures, and other information pertinent to this release of the Cartridge Tape Backup Utilities Software.

The Cartridge Tape Backup Utilities 1.0 consists of an installation diskette containing the following programs.

TapeBackupVolume.run - Disk volume backup utility.

TapeRestore.run - Disk file and Disk volume restore utility.

TapeSelectiveBackup.run - Disk file backup utility.

NGENQicServer.run - 1/4" Tape server.

DeinstallQicServer.run - Implements command to deinstall the 1/4" Tape server.

QicErase.run - Implements utility to erase 1/4" Tape cartridges.

QicRetention.run - Implements utility to retention a 1/4" tape cartridge.

TapeCopy.run - Implements the Tape Copy command.

For this release the diskette also contains:

XBif.run - Mediated interrupt handler for TM-001 and HB-001 devices.

Request.2.Sys - A loadable request file for XC-002 and HB-001 devices.

Plog.run - An enhanced version of Plog that displays cartridge tape status information.

2.0 Contents of Distribution Diskette

The Cartridge Tape Backup Utilities Distribution Diskette is your master copy, and has been shipped write-protected. It should not be write-enabled, nor should it be used as a working copy.

The Distribution Diskette contains the following files in the <Sys> directory:

TapeBackupVolume.run	TapeRestore.run
TapeSelectiveBackup.run	QICEraser.run
QicRetension.run	NGENQicServer.run
DeInstallQicServer.run	Request.2.sys
Request.X.sys	XBif.run
TapeCopy.run	Plog.run
HdInstall.sub	Cleanup.sub
Dailybackup.sub	InstallComplete.sub
QicInstall.sub	Update.flc
Weeklybackup.sub	ReleaseNotice

3.0 Installation Procedures

WARNING

This software should not be installed on an IWS workstation with 1/2" Magtape. This software currently does not support 1/2" Magtape and installing it will overwrite the 1/2" Magtape software installed on the IWS workstation. If you overwrite your 1/2" software you must reinstall it from the IWS Magtape Distribution Diskette.

WARNING

This software installation diskette includes two updated files which must be used for the Cartridge Tape Backup Utilities to operate properly. These are XBif.run and Request.2.sys. Therefore the software on this diskette must be installed after you have installed Standard Software and all other CT supplied software.

The Cartridge Tape Backup Utilities software should only be used on Convergent Information Processing Systems which are equipped with hard disk, or in clusters where the master is equipped with hard disk.

Use the installation procedures described below (after updating the Standard Software revision level, if required). Characters that you must type are shown in **boldface**. Special keys, such as RETURN and GO, are shown in upper case.

3.1 NGEN Hard Disk Systems

- A. Signon and set path at the workstation. If the Signon form is displayed, fill it in and press GO. Set the path as follows:

```
Command  Path  RETURN
Path
  [Volume]                Sys  RETURN
  [Directory]             Sys  RETURN
  [Default file prefix]   RETURN
  [Password]              (if any)  GO
  [Node]
```

If your hard disk has a volume password on [Sys], fill this password into the [Password] field before pressing GO.

- B. Insert the Cartridge Tape Backup Utilities distribution diskette into a floppy diskette drive on the workstation.

NOTE: If your NGEN has only one floppy diskette drive, that drive will be named [f0]. If your NGEN system has more than one floppy disk drive then the device name of the left most drive will be [f0], the next drive to the right will be [f1], the drive to the right of that [f2], etc.

The following command will begin the installation. If you are using a floppy drive other than [f0], you must use its name in the command:

```
Command  Submit  RETURN
Submit
  File list          [f0]<Sys>HdInstall.sub  GO
  [Parameters]
  [Force Expansion?]
  [Show Expansion?]
```

Answer any questions you may be asked during the installation. The installation will indicate when it is complete.

NOTE: After the installation has been completed you must reboot your workstation before you can use the Cartridge Tape Backup software.

3.2 Installing the X-Bus Interrupt Server (XBif)

The X-Bus interrupt server, XBif.run, must be installed on the workstation with the Cartridge Tape Module before the Cartridge Tape Module may be used. Failure to install XBif.run will result in error 33 "Service not available" or error 9059 "XBif not installed" when the tape is accessed.

Install the X-Bus system service interactively using the Run File command as follows:

```
Command   Run File
Run File
  File name      [Sys]<Sys>XBif.run  <GO>
  [Parameters]
```

Install the X-Bus system service automatically at system initialization using a SysInit.jcl file of the following form:

```
$JOB SysInit

$RUN [Sys]<Sys>XBif.run

$END
```

3.3 MegaFrame SRP Systems

This software may be installed on a MegaFrame if that MegaFrame does not have any type of tape backup device (either quarter-inch cartridge or half-inch reel). In this environment the software will be used by NGEN cluster workstations that have Cartridge Tape Backup Modules and are booted from the cluster. You must install the software on the MegaFrame from an NGEN cluster workstation with a floppy disk drive.

This software does not operate with the Cartridge Tape Backup hardware on the MegaFrame and therefore should not be installed on a MegaFrame that has a quarter-inch cartridge or half-inch tape drive. The MegaFrame provides software for tape backup and restore via special commands which can be used from an NGEN cluster workstation. See the appropriate MegaFrame Utilities documentation.

3.4 Stand-Alone Floppy Disk Systems

The Cartridge Tape Backup Utilities Software is not supported on NGEN Stand-Alone dual floppy systems without a hard disk.

4.0 Required Files

The following files must always be contained in the <Sys> directory in order to use the Cartridge Tape Backup Module:

Request.2.sys	(loadable requests)
Request.X.sys	(loadable requests)
XBif.run	(interrupt handler)

The following run files must reside in the <Sys> directory and implement the Cartridge Tape Backup Utility commands:

- TapeBackupVolume.run
- TapeRestore.run
- TapeSelectiveBackup.run
- QicErase.run
- QicRetension.run
- TapeCopy.run

The following run files must reside in the <Sys> directory and implement the cartridge tape server system service and its associated commands:

- NGENQicServer.run
- DeInstallQicServer.run

The following submit files reside in the <Sys> directory and implement the Daily and Weekly Backup commands:

- DailyBackup.sub
- WeeklyBackup.sub
- Cleanup.sub

NOTE: If a Cleanup.sub file resides in your <Sys> directory before the Installation of the Cartridge tape software, your file will not be overwritten.

5.0 System Software Compatibility

5.1 Workstation Environment

The Cartridge Tape Backup Utilities require CTOS 9.1 or later and Standard Software 9.1 or later to function correctly. If you have not yet installed CTOS 9.1 or Standard Software 9.1 (or later versions) then do so before installing this package.

5.2 MegaFrame Environment

This software may be installed on a MegaFrame if that MegaFrame does not have any type of tape backup device (either quarter-inch cartridge or half-inch reel). In this environment the software will be used by NGEN cluster workstations that have Cartridge Tape Backup Modules and are booted from the cluster. You must install the software on the MegaFrame from an NGEN cluster workstation with a floppy disk drive.

WARNING

This software does not operate with the Cartridge Tape Backup hardware on the MegaFrame and therefore should not be installed on a MegaFrame that has a quarter-inch cartridge or half-inch tape drive. The MegaFrame provides software for tape backup and restore via special commands which can be used from an NGEN cluster workstation. See the appropriate MegaFrame Utilities documentation.

6.0 Hardware Information

6.1 Hardware Configurations Supported

The Cartridge Tape Backup Utilities require at least the following NGEN modules combined as a system:

A CP-001/8 8 Mhz 80186 processor module with at least 512k bytes of memory, including a monitor and keyboard.

Plus one of the following disk modules:

HD-002	10 Mb floppy/hard disk
HD-003	20 Mb floppy/hard disk

or an FD-001 dual floppy disk module and one of the following hard disk modules:

HD-006	20 Mb hard disk upgrade
HD-011	32 Mb hard disk upgrade

An HB-001 Tape Backup module plus an additional power supply module (PS-001/PS-002) if required.

(Note; The floppy disk requirement is only for software installation, and the hard disk may be omitted if the NGEN system is clustered to a master workstation)

The Cartridge Tape Backup Utilities software may be installed on an IWS or AWS workstation and run on a CWS workstation. The only hardware requirement is that these workstations be connected to a workstation cluster that includes an NGEN Master workstation with an HB-001 Cartridge Tape Backup Module.

6.2 Hardware Installation

The Cartridge Tape Backup Module can be installed on any NGEN system that already includes a hard disk module with a floppy. This workstation can operate as a standalone, a local file system or as a master. When operating as a master workstation the Cartridge Tape Backup Module is usable by all workstations connected to that workstations cluster.

The Cartridge Tape Backup Module can also be installed on an NGEN system without a hard disk provided the system is clustered to a master workstation with a hard disk. In this configuration the master must have the Cartridge Tape Backup Utilities software installed on it.

Before installing the Cartridge Tape Backup Software, install the Cartridge Tape Backup module as detailed in the NGEN Installation Guide and the Installation Sheet which is packed with your tape module.

7.0 Resource Requirements/Utilization

7.1 Memory Requirements/Utilization

The table below indicates the memory requirements of interactive programs included in the Cartridge Tape Backup Utilities.

When two numbers are given, the first indicates the minimum memory requirement and the second indicates the maximum amount of memory that the program can use.

TapeBackupVolume.run	130K	194K
TapeSelectiveBackup.run	116K	180K
TapeRestore.run	119K	183K
DeInstallTapeServer.run	26K	
TapeCopy.run	100K	170K

The table below indicates the memory requirements for installed system services:.

XBif.run	4K
NgenQicServer.run	77K

7.2 Disk Requirements/Utilization

The Cartridge Tape Backup Utilities and associated system files require the following amount of disk storage on the <Sys> directory:

NGEN (hard disk versions) 900 sectors

8.0 Restrictions

This software should not be installed on an IWS workstation with 1/2" Magtape. This software currently does not support 1/2" Magtape and installing it will overwrite the 1/2" Magtape software installed on the IWS workstation. If you overwrite your 1/2" software you must reinstall it from the IWS Magtape Distribution Diskette.

This software installation diskette includes two updated files which must be used for the Cartridge Tape Backup Utilities to operate properly. These are XBif.run and Request.2.sys. Therefore the software on this diskette must be installed after you have installed Standard Software and all other CT supplied software.

This software currently does not operate with the Cartridge Tape Backup hardware on the MegaFrame and therefore should not be installed on the MegaFrame SRP. The MegaFrame provides software for tape backup and restore. See Section 5.2 of this document for further information on MegaFrame software compatibility.

This software will not operate with any version of CTOS earlier than Version 9.1.

9.0 Supplementary Information

9.1 Naming Convention for HB-001 Tape Drives

An NGEN HB-001 Tape Backup Module contains a single 1/4" tape drive. Up to two HB-001 modules may be attached to an NGEN processor.

The first or leftmost tape drive is called [QIC] or [QIC0] and the second or rightmost tape drive is called [QIC1]. Most systems will have only a single drive and this drive can be called [QIC].

Tape drive names may also contain file positioning information. A full description of tape drive naming conventions can be found in the manual Quarter-Inch Cartridge Tape for NGEN.

9.2 Booting Diagnostics from Cartridge Tape

An NGEN HB-001 Tape Backup Module contains a boot ROM that allows an NGEN system to be booted from a cartridge tape.

You make a bootable tape by copying a bootable run file to the first file of a tape cartridge, using the TapeCopy command. To make a bootable Diagnostic tape cartridge you would copy the file 'SysImage.sys' from the Diagnostic Distribution Diskette to the tape cartridge. The TapeCopy command is described in the manual Quarter-Inch Cartridge Tape for NGEN.

A tape cartridge will be booted only if no bootable diskettes are inserted in the floppy drives and if no bootable hard disk is between the tape module and the processor module. Move the hard disk module to the right of the tape module if you want to boot from tape; you can still boot from the hard disk if no tape is in the tape drive, or the drive contains a nonbootable tape. Insert the tape cartridge in the tape drive and press the Reset button on the rear of the processor module.

The standard CTOS operating systems are disk based and must be booted from either a local disk (floppy or hard disk) or a remote disk at the master. The device from which CTOS is booted becomes the System volume. Since the CTOS file system currently does not recognize quarter inch tape as a System volume, the operating system cannot be successfully booted from a tape cartridge.

10.0 Supplementary Information

This section describes useful executive command submit files that allow you to do weekly and daily disk volume backups. Also included is information to help you create a bootable floppy.

10.1 Daily and Weekly Backups

Supplied on the distribution diskette are two submit files which implement the Weekly and Daily backup commands.

The Weekly and Daily backup commands archive a single hard disk at a time and should be invoked separately for each disk on the system using different tape cartridges. These commands and files are provided as a useful example of a backup process and may be used as is or modified to suit special user needs. You may use the Editor to examine these files:

```
WeeklyBackup.sub  
DailyBackup.sub
```

You will notice that they are composed of commands to do the following:

```
Disable Cluster (if this NGEN is a Master)  
Screen Setup (to suppress pause between  
pages)  
Type (to display a message on the screen)  
Tape Backup Volume (perform disk backup)  
Tape Restore (list/verify backup tape)  
QICerase (Erase tape cartridge)  
Resume Cluster (if this NGEN is a Master)
```

The Weekly and Daily backup submit files are designed to work together and require at least two separate tape cartridges per disk volume to be backed up. They also require that the correct date and time be entered at Signon or by using the Set Time command.

The Weekly submit file should be run once each week. It will do a complete backup of a disk volume to a tape cartridge and it will erase another cartridge to be used for the Daily backups during the week.

The Daily backup submit file is run each day. It will only backup those files that have been updated since the last Daily or Weekly backup. The Daily backups use the tape cartridge that was prepared by the Weekly backup. Each Daily backup is added (or appended) to this tape cartridge. At the end of the week you will have perhaps five individual daily backups on this tape.

The submit files may be run by using the Submit utility or by using the following command:

```
Command      Weekly Backup (or Daily Backup)
Backup Device                               d0
Device Password                             d0
[Disable Cluster (Type "Y" if desired)]    Y
```

The Backup Device name and Device Password are exactly the same as those used in the Tape Backup Volume command which is described in the manual Quarter-Inch Cartridge Tape for NGEN.

The Disable Cluster should only be answered "Y" if the Cartridge Tape Backup Module you are using is on an NGEN master workstation. Answering "Y" to this parameter disables the cluster which allows the tape backup operation to be done more quickly. The default is not to disable the cluster.

The Weekly and Daily backup submit files will invoke a submit file of the name [Sys]<Sys>Cleanup.sub which will delete unwanted temporary and scratch files prior to each backup operation. The Cleanup.sub file supplied on the distribution diskette will not delete any files, it is provided as a template so you can create your own Cleanup.sub using the Editor.

10.2 Bootable diskettes for Backup and Restore

You can make bootable diskettes to backup and restore a hard disk from tape.

First, two copies of the CTOS Standard Software **INITIALIZATION** diskette must be made. To do this insert the **INITIALIZATION** diskette in the floppy drive [f0] and issue the Floppy Copy command:

```
Command      Floppy Copy    GO
```

Follow the Floppy Copy directions to duplicate the diskettes. Make two copies, one will be used to do backups and the other to do restores. After both copies have been made, make sure one of the the newly copied diskettes is in floppy drive [f0] and issue the following command:

```
Command      Submit    RETURN
Submit
File List    [Sys]<Sys>CreateBackupFloppy.sub    GO
```

To update the files on the diskette you must issue the following command:

```
Command      LCopy      RETURN
LCopy
File list    XBif.run Request.2.sys Request.X.sys
[File prefix(s) from] [Sys]<Sys>
[File prefix(s) to]   [f0]<Sys>
[File suffix(s)]
[Overwrite OK?]      Yes GO
```

To update the command file on the diskette you must issue the following command:

```
Command      Copy      RETURN
Copy
File from          [Sys]<Sys>Sys.Cmds
File to            [f0]<Sys>Sys.Cmds
[Overwrite ok?]   Yes GO
```

Now redo the preceding steps using the second diskette so that both diskettes are updated and identical at this stage. You may wish to label one diskette "Bootable Tape Restore" and the other "Bootable Tape Backup" since they will each have different tape software installed on them.

Now you must copy the appropriate tape software to the diskette. Since all of the tape software cannot fit on a single bootable diskette, you have created two diskettes, one which you will use to do backups and the other to run Tape Restore.

To create the diskette to use Tape Backup Volume you insert your diskette "Bootable Tape Backup" and issue the following command:

```
Command      Copy      RETURN
Copy
File from          [Sys]<Sys>TapeBackupVolume.run
File to            [f0]<Sys>TapeBackupVolume.run
[Overwrite ok?]   Yes GO
```

To create a diskette to use Tape Restore you insert your diskette "Bootable Tape Restore" and issue the following command:

```
Command      Copy      RETURN
Copy
File from          [Sys]<Sys>TapeRestore.run
File to            [f0]<Sys>TapeRestore.run
[Overwrite ok?]   Yes GO
```

11.0 Documentation Updates

The manual Quarter-Inch Cartridge Tape for NGEN describes the software installation and usage.

The manual Quarter-Inch Cartridge Tape Hardware describes the operation of the hardware.

12.0 Known Errors and Omissions

If you have a version of CheckConfig.run that is earlier than 10.0, it will not display your NGEN system configuration. CheckConfig.run 10.0 is the only version that understands the Tape Backup Module identification code.

In a cluster configuration, if a tape server (either quarter inch or half inch) is installed on the master, it will be used by all workstations on the cluster even if the workstation has its own tape module. To use a local tape module on a workstation in this environment, you must install the quarter inch tape server on the cluster workstation with the tape module. For example if you have an IWS master with half inch Magtape and its server is installed, and you want to use a tape module at an NGEN workstation that is clustered to the IWS master, you must install the quarter inch tape server on the NGEN workstation. If you fail to do this error 9035, "Bad tape file name..." will occur because the half-inch tape server doesn't know about the [QIC] device name.

This release of the NGEN Cartridge Tape Backup Software supports single tape archive file interchangeability with the MegaFrame SRP Quarter Inch Tape drive. Multiple tape archive files may not be interchangeable due to differences in the handling of end of tape.